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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,640	07/29/2003	William Dale Jones	SSI-08200	8274
28960	7590	01/27/2006	EXAMINER	
HAVERSTOCK & OWENS LLP 162 NORTH WOLFE ROAD SUNNYVALE, CA 94086			STINSON, FRANKIE L	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/630,640

Applicant(s)

JONES, WILLIAM DALE

Examiner

FRANKIE L. STINSON

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 31-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>various</u> . | 6) <input type="checkbox"/> Other: _____  |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 9-14, 16, 17, 18, 21-26, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan'104 (Japan 7-283104) in view of either Costantini et al. (U. S. Pat. No. 6,612,317) or Yamagata et al. (U. S. Pat. No. 6,874,513).

Re claim 1 and 16, Japan'104 is cited disclosing a system for processing of an object with a fluid, comprising: a process chamber (14); means (33) for injecting a processing chemistry into the process chamber including means (35) for starting and means for stopping the means for injecting; and means (5d) for substantially preventing fluid from re-entering the means for injecting that differs from the claims only in the recitation of the supercritical fluid and the high pressure vessel. The patent to Costantini and Yamagata are each cited disclosing that it is old and well known to employ a supercritical fluid in a high-pressure vessel as claimed. It therefore would have been obvious to one having ordinary skill in the art to modify the device of Japan'104, to employ a supercritical fluid and chamber as taught by either Costantini or Yamagata, for the purpose of employing a cleaning that is less expensive. Re claims 2 and 17, Costantini and Yamagata inherently disclose the predetermined pressure in that the vessel/chamber is pressurized and to inject the fluid therein, it would require a known pressure to overcome. Re claims 4 and 5 Japan'104 discloses a first and second

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backflow prevention means (5d and 4d). Re claims 6, 7, 21 and 22 and 26, Costantini and Yamagata disclose control means. Re claims 8, 19, 23 and 24, Japan'104 discloses the preventing means operative when at least one of the means for stopping is active and the means for starting is active. Re claim 10 and 27, Japan'104 and Yamagata disclose the object as being semiconductor wafers. Re claims 11-14, 28 and 29, Costantini and Yamagata both disclose the fluid source/supplying and the same being a supercritical fluid, liquid carbon dioxide. Re claim 15, Costantini and Yamagata both disclose the mixing of the fluids (see col. 8, lines 51-58 in Costantini and as at 28, 29 in Yamagata). Re claim 25, Costantini and Yamagata disclose the high-pressure chamber. Re claims 3 and 18, define over the applied prior art only in the recitation of the specific pressure. Nonetheless, to employ one pressure over another is an obvious matter of a design choice in that various pressures and temperature maybe employed to enhance the cleaning process.

3. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith Jr. et al. (U. S. Pat. No. 5,509,431) in view of Japan'104.

Re claim 30, Smith discloses a supercritical processing system for processing a wafer with a fluid, the fluid being from a fluid source, the system comprising:

- a. a circulation loop (21, 45, 48, 49) coupled to a high-pressure processing chamber; and
- b. an inlet line (at 38, 39, 26) for introducing the fluid into the circulation loop, the inlet line including:
  - i. an inlet port (unnumbered) in the circulation loop;

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- ii. a back-pressure regulator (39) coupled to the inlet port;
- iii. a pump (38) for compressing the fluid to form a pressurized fluid;
- iv. a first line (downstream 38) for transferring the pressurized fluid from the pump to the back-pressure regulator, the first line configured to maintain a uni-directional flow of the pressurized fluid from the pump towards the back-pressure regulator;
- v. a second line (upstream 38) for transferring a quantity of the fluid from the fluid source (37) to the pump, that differs from the claim only in the recitation of the second line configured to maintain a uni-directional flow of the fluid from the fluid source to the pump.

Japan'104 is cited disclosing the uni-directional flow (via 5d and 4d) that maintains a uni-directional flow. It therefore would have been obvious to one having ordinary skill in the art to modify the device of Smith, to include a valving arrangement as taught by Japan'104, for the purpose of preventing any backflow contamination.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In Nita et al., note the back-flow preventing means.

4. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANKIE L. STINSON whose telephone number is (572) 272-1308. The examiner can normally be reached on M-F from 5:30 am to 2:00 pm and some Saturdays from approximately 5:30 am to 11:30 am.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached on (571) 272-1700. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

fls



FRANKIE L. STINSON  
Primary Examiner  
GROUP ART UNIT 1746